No.



9700311

HELE UNIVERD STAYLES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrob Seed Company

MINTERS, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED. OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAWINSUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW. THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT. C.?. IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR ROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT LETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS QED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'AG2101'

In Costimony Microst I have hereunto set my hand and caused the seal of the Mint Insicting Irotection Office to be affixed at the City of Washington, D.C. this thirtieth day of July in the year of our Lord one thousand nine hundred and ninety-nine.

Allest:

Am havie The

Commissioner Plant Variety Protection Office Sariculiural Wheebing Service

Sul 11.6

CAPACITY OR TITLESO VDean Product Manager DATE 5-15-97

CAPACITY OR TITHE MOST ON SOUDON PASSANCE

ASGROW SEED COMPANY PVP APPLICATION AG2101 MAY, 1997

EXHIBIT A ORIGIN AND BREEDING HISTORY OF AG2101

1993 Cross RP931462 was made in Isabela, Puerto Rico.

Parentage: A1923/2/A1900/2396/40-3-2

F1 and F2 generation was grown near Isabela, Puerto Rico and advanced using modified

pedigree selection.

1994 Summer F3 bulk populations were grown in Redwood Falls, MN, and single plants pulled.

1994-95 Single plant selections of F3 derived F4 rows were grown in progeny rows near

Rancagua, Chile. Row RP931462 R95-01439 was selected based on visual appearance

and agronomic characteristics.

1995 Summer RP931462 R95-01439 was entered in a yield trial at 5 locations, were it placed 2nd of

50 entries.

1996 Winter RP931462 R95-01439 was renamed AGA2101 and increased in winter nursery.

Breeder seed was developed from purification and roguing of F3 derived F6 seed.

1996 AGA2101 was entered in a yield trial at 14 locations across the northern corn belt,

where it placed 10th of 41 entries. It was renamed AG2101.

AG2101 is uniform and stable within commercially acceptable limits based on trial observations since 1995. As with any other soybean variety, variants can occur for almost any characteristic during the course of repeated sexual reproduction.

Request: Please specifically address which particular agronomic and visual characteristics were used as selection criteria during the development of 'AG2101'.

Response: The nominated progeny row was selected based on visual appearance. Asgrow bases visual appearance selection upon uniformity for visual phenotype (i.e., flower color, pubescence color, hilum color, and pol wall color), maturity uniformity and plant height uniformity among individual plants, and resistance to Roundup herbicide (sprayed with 32 oz./acre), if variety is a RoundupReady variety. Also, we select for a visual appearance which shows a potential for high yield.

ASGROW SEED COMPANY PVP APPLICATION AG2101 Soybean MAY, 1997

EXHIBIT B Novelty Statement Concerning AG2101 Soybean

To our knowledge, the soybean varieties that closely resemble AG2101 are A1923 and A1900

1. Pod wall color AG2101 - Tan
A1923 - Tan
A1900 - Brown

Tolerance to glyphosate herbicide
 AG2101 - Present
 A1923 - Absent

EXHIBIT C

2100 1 01 4 1

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
8ELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY SOYBEAN (Glycine max LJ

NAME OF APPLICANTISI	TEMPORARY DESIGNATION	VARIETY NAME
Asgrow Seed Company	AGA21601	AG2101
ADDRESS (Street and Na., or R.F.D. Na., City, State, and Zip Cod	e) _	FOR OFFICIAL USE ONLY
2605 East Kilgore Road Kalamazoo, Michigan 49001		PYPO NUMBER 9700311
Choose the appropriate response which characterizes the var in your answer is fewer than the number of boxes provided. Starred characters * are considered fundamental to an adequate when information is available.	place a zero in the limit our w	usu ununci a) or imp (c.5. [a i)).
1. SEED SHAPE:	1	
2 1 1		
1 = Spherical (L.W., L.T., and T.W. ratios = < 1.2) 3 = Elongate (L./T.ratio > 1.2: T/W = < 1.2)	2 = Spherical Flattened (4 = Elongate Flattened (LW ratio > 1.2; L/T ratio = < 1.2) L/T ratio > 1.2; T/W > 1.21
★ 2. SEED COAT COLOR: (Mature Soed)		
1 1 = Yellow 2 = Green 3 = Brown	4 = Black 5 = Other /	Specify)
1. SEED COAT LUSTER: (Mature Hand Shelled Seed)		
1 = Outl ('Carsoy 79'; 'Braxton') 2 = Shiny ('Neoso	y'; 'Gæoy 17')	
4. SEED SIZE: (Mature Seed)		
1 6 Grams per 100 seeds	·	
5. HILUM COLOR: (Mature Seed)	· · · · · · · · · · · · · · · · · · ·	
6 1 = Buff 2 * Yellow 3 * Brown 4	= Gray S = Imperfect State	ek 6 = Black 7 = Other (Soecify)
C 5. COTYLEDON COLOR: (Mature Seed)		
1 ; = Yellow 2 = Green		
7. SEED PROTEIN PEROXIDASE ACTIVITY:		
1 1 = Low 2 = High		
8. SEED PROTEIN ELECTROPHORETIC BAND:		
1 - Type A (SP1 ³) 2 - Type B (SP1 ⁵)		
9. HYPOCOTYL COLOR:		
1 = Green anily ("Evans"; "Davis") 2 = Green with 3 = Light Purple below catyledons ("Beeson"; "Pickett 71") 4 = Oark Purple extending to unifoliate leaves ("Hodgson"; "Company of the company of the co	bronze band below cotyledons (" Coker Hamoton 266A")	Noodworth'; 'Tracy')
T10. LEAFLET SHAPE:		
3 1 = Lanceolate 2 = Oval 3 = Ovate	4 = Other (Specify)	

11. LEAFLET SIZE:	
2 3 = Large ('Crawford': 'Tracy')	Z = Medium ("Carsoy 79"; "Gasoy 17")
2 3 - Large ('Crawford'; Tracy')	
12 LEAF COLOR:	
1 = Light Green ("Weber": "Yark")	2 = Medium Green ("Corsoy 79"; "8raxton")
2 3 + Dark Green ('Griome'; Tracy')	
★ 13. FLOWER COLOR:	
2 1 - White 2 - Purple] = White with purple throat
★ 14 POD COLOR:	
	3 • Slac×
1 1 1 an 2 - studen	
★ 15. PLANT PUBESCENCE COLOR:	
2 1 = Gray 2 = Brown (Tawny)	
16. PLANT TYPES:	
1 = Slencer ("Essex": "Amsoy 71") 2	2 = Intermediate ('Amcor'; 'Braxton')
+ 17. PLANT HASIT:	
1 = Determinate ('Gnome'; 'Braxton') 3 = Indeterminate ('Nebsoy'; 'Improved Pelica	2 = Semi-Determinate (Will')
★ 18. MATURITY GROUP:	
0 5 9 47 10 7 11 7 11	4=1 5=11 5=111 7=1V 8=V
111 - 11	12 = IX
★ 19. DISEASE REACTION: (Enter 0 = Not Tested: 1 = Sus	iceptible: 2 = Resistant)
BACTERIAL DISEASES:	
* 0 Bacterial Pustule (Xanthomonas phaseoli var.	colennist
* Sacterial Blight (Pseudomonas glycinea)	
Wildfire (Pseudomanas tabaci)	
FUNGAL DISEASES:	
8 Brown Spot (Septoria glycines)	
Frogeye Leaf Soot (Carcospara solina)	
★ ① Race 1 ① Race 2 ① Race	3 0 Race 4 0 Race 5 0 Other (Specify)
O Target Spot (Corynespora cassiicola)	
Downy Mildew (Peronospora terfoliorum var. n	nanshurica)
0. Powdery Mildew (Microsonaera dellusa)	
# 2 Brown Stem Rot (Caphalosporium gregatum)	

19.	DISEASE REACTION	ON: (Enter 0 = Not Tested; 1 = Susceptible; 2	- Resistanti (Continued)	9700311
	FUNGAL DISEA	SES: (Continued)		
*	O Pod and St	em Blight (Diapartne phaseolorum var; sojae)		
•	O Purple Seed	d Stain (Cercospora kikucnii)		
	0 Rhizoctoni	a Root Rot (Rhizoctonia solani)		
	Phytopnino	ora Rot (Phytophthora megasperma vat. sojae)		
*	2 Race 1	2 Race 2 2 Race 3 2	Race 4 2 Race S	O Race S 2. Race 7
	0 Racz 8	2 Race 9 2 Other (Saecify)	10, 13, 14, 18, 2	1, 26
	VIRAL DISEASE	5:		
	0 Bud Blight	(Tabacco Ringspot Virus)		
	0 Yellow Mos	aic (Bean Yellow Mosaic Virus)		
*	0 Cowsea Mo	saic (Cawoea Calorotic Virus)		
	0 Pod Mottle	(Bean Pod Mottle Virus)		
, 	0 Seed Mattle	(Soyoean Mosaic Virus)		
•	NEMATODE DISE	ASES:		
	Soybean Cy	st Nematode (Heterodera glycines)		
*	0 Race I	0 Race 2 1 Race 3 0	Race 4 0 Cther (Soscily) Race 14
-	0 Lance Nema	tode (Haplelaimus Calombus)	-	
*	O Southern Ro	ot Knot Nematoce (Meloidogyne incognita)		
*	0 Northern Ro	ot Knot Nematoce (Meloidagyne Hapla)		
	0 Peanut Root	Knot Nematode (Meloidogyne arenana)		
	Aenitorm Ne	matode (Rotylenchulus reniformis)		
		EASE NOT ON FORM (Specify):		
		ESPONSES: (Enter 0 = Not Tested; 1 = Suscen	otible: 2 = Resistant)	
*	Iron Chloresi	s on Calcareous Soil	•	
	Other /Soecis	'y/		
21. 17	NSECT REACTION:	(Enter 0 = Not Tested: 1 = Susceptible: 2 = R	ल्डळवातर)	
	Mexican Bear	Beetle (Epilachna vanvestis)		
	O Potato Leaf F	topper (Empoasca fabae)		
	Other (Specif	y)		
22_ 18	NDICATE WHICH V	RRIETY MOST CLOSELY RESEMBLES THA	AT SUBMITTED.	
	CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
21.	ant Shape	A1923	Seed Coat Luster	A1923
Le	al Shaoe	A1923	Seed Size	A1923
	al Color	A1923	Seed Shape	A1923
La	at Size	A1923	Seedling Pigmentation	A1923

22. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

	NO. OF PLANT DAYS LOOGING MATURITY SCORE		CM PLANT	LEAFLET SIZE		SEED CONTENT		SEED SIZE	NO. SEEDS/
VARIETY		HEIGHT	CM Width	CM Langth	% Protein	% Qii	SEEDS	200	
AG2101	129.3	1.2	79					15.6	
A1923 Name of Similar Variety	127.5	- 1.2	76		~			16.3	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

- 1. Caldwell, B.E., ed. 1973. Saybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
- 2. Suttery, 8.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soypean varieties. Crop Sci., 8: 722-725.
- 3. Hymowrtz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germolesm collection. Crod Sci., 13: 420-421.
- 4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

ASGROW SEED COMPANY PVP APPLICATION AG2101 Soybean MAY, 1997

EXHIBIT D Additional Description of AG2101 Soybean

AG2101 is a early maturity group II variety with resistance to Roundup the herbicide. It has very high yield potential. It has comparable yields to lines of similar maturity and has excellent agronomic characteristics, including lodging resistance. It is very broadly adapted but should do very well on heavier soils which are prone to Phytophthora Root Rot as it has a major gene for Phytophthora resistance, Rps1k. It also has demonstrated better than average tolerance to iron chlorosis.

REPRODUCE LOCALLY. Include form number and date on all reproductions.	FORM APPROVED - OMB NO	
U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE	1974 (5 U.S.C. 552a) and the Pape	e in accordance with the Privacy Act of erwork Reduction Act (PRA) of 1995 .
EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP	Application is required in order to certificate is to be issued (7 U.S.C. until certificate is issued (7 U.S.C.	determine if a plant variety protection , 2421), Information is held confidentia 24261.
1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
ASGROW SEED COMPANY		
	AGA21601	AG2101
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)	5. TELEPHONE (include area code)	6. FAX (include area code)
7089-248-23	616-384-5548	616-384-5652
2605 East Kilgore Road Kalamazoo, MI 49001-1744	7. PVPO NUMBER 97003	1.1
8. Does the applicant own all rights to the variety? Mark an "X" in appropriate b	lock. If no, please explain.	X YES NO
	·	
 Is the applicant (individual or company) a U.S. national or U.S. based company If no, give name of country 	?	X YES NO
10. Is the applicant the original breeder? If no, please answer the following:		X YES NO
Is (are) the original breeder(s) a U.S. national(s)? If no, give name of c	•	YES NO
 b. If original rights to variety were owned by a company: Is the original breeder(s) U.S. based company? If no, give name of course. 	intry	
the state of the s		
11. Additional explantion on ownership [If needed, use reverse for extra space]:		
PLEASE NOTE:	2	•
LEADE NOTE:		
	ne of the following criteria:	nantualimi la decido de la
Plant variety protection can be afforded only to owners (not licensees) who meet on the rights to the variety are owned by the original breeder, that person must of a country which affords similar protection to nationals of the U.S. for the same	be a U.S. national, national of a ne genus and species.	
Plant variety protection can be afforded only to owners (not licensees) who meet on the rights to the variety are owned by the original breeder, that person must of a country which affords similar protection to nationals of the U.S. for the same	be a U.S. national, national of a ne genus and species.	st be U.S. based, owned by
Plant variety protection can be afforded only to owners (not licensees) who meet on the rights to the variety are owned by the original breeder, that person must of a country which affords similar protection to nationals of the U.S. for the same of the u.S. for the u.S. f	be a U.S. national, national of a ne genus and species. nal breeder(s), the company mus a affords similar protection to nat needer and the applicant must me	et be U.S. based, owned by ionals of the U.S. for the same et one of the above criteria.
Plant variety protection can be afforded only to owners (not licensees) who meet on the rights to the variety are owned by the original breeder, that person must of a country which affords similar protection to nationals of the U.S. for the same of the rights to the variety are owned by the company which employed the originationals of a UPOV member country, or owned by nationals of a country which	be a U.S. national, national of a me genus and species. Inal breeder(s), the company must affords similar protection to national and the applicant must me ling. See Section 41(a)(2) of the median control of the section 41(a)(2) of the median control of the section 41(a)(2).	et be U.S. based, owned by ionals of the U.S. for the same et one of the above criteria. The Plant Variety Protection Act for the same in the Plant Variety Protection Act for the plant Variety Protection Prote

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